

Detailed Data Tables: Men Who Have Sex with Men (MSM)

Recent changes to the presentation of Massachusetts HIV/AIDS surveillance data

Effective January 1, 2011, the Massachusetts Department of Public Health (MDPH), Bureau of Infectious Diseases, HIV/AIDS fact sheets, epidemiologic reports and other HIV data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts. As of January 1, 2014, this resulted in the removal of 4,135 HIV/AIDS cases, of which 973 have died and 3,162 were living. These persons living with HIV/AIDS may still continue to reside and receive care in the Commonwealth. The total number of persons living with HIV/AIDS, irrespective of location at diagnosis, is the basis for MDPH service planning. This change is partially a result of increased activities required by the Centers for Disease Control and Prevention (CDC) for de-duplication among states in an effort to identify cases that are counted multiple times in the National HIV/AIDS Surveillance System. The cases are assigned to the state that reports the earliest date of AIDS diagnosis if available. If the case has not progressed to AIDS, the case is assigned to the state with the earliest HIV diagnosis date. Please note that previous HIV/AIDS fact sheets, data reports and presentations included cases that may have been first diagnosed in another state.

Also effective January 1, 2011, the MDPH HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to eliminate the presumed heterosexual reported risk category for men; those cases have been reassigned to the no identified risk (NIR) category. The presumed heterosexual reported risk category was used with the intention of identifying HIV reported risk for women when sex with men is the only reported risk factor, there is no evidence of current or past injection drug use (IDU), and behavioral risk and HIV status information about male sexual partners are unknown. Twenty-nine percent of female living with HIV/AIDS and 40% of recent female HIV diagnoses are reported in the presumed heterosexual reported risk category. The application of the presumed heterosexual reported risk category to men is overly inclusive in that female to male HIV transmission is biologically less probable, and there are alternate reported risks that are possible for men, including sex with other men (MSM) or IDU. The CDC reports men diagnosed with HIV/AIDS who report sex with women as their only risk factor, without corresponding partner risk or HIV status information, in the NIR category. This revision to report presumed heterosexual male HIV/AIDS cases as NIR will bring Massachusetts HIV/AIDS case reporting for men in alignment with CDC standards. The MDPH will maintain presumed heterosexual and heterosexual reported risk categories for women.

Explanation of Estimated Rates for MSM and non-MSM

Estimated MSM Prevalence Rate: An estimate of the proportion of MSM that are currently living with HIV/AIDS. The numerator is the number of MSM who are living with HIV/AIDS as of a specific date and the denominator is the estimated size of the MSM population. The size of the MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting same-sex partner (or opposite and same-sex partner), on the 2011 and 2012 Massachusetts BRFSS (4.9%), by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 101,175. The prevalence rate in MSM is calculated by the formula:

$$\begin{aligned}\text{HIV/AIDS prevalence rate for MSM as of 1/1/14} &= (\text{number of MSM living with HIV/AIDS on 1/1/14} \div \\ &\quad \text{estimated population size of MSM}) \times 100,000 \\ &= ((7,206 / (.049 \times 2,064,804)) \times 100,000 \\ &= (7,206 / 101,175) \times 100,000 \\ &= 0.0712228494761711 \times 100,000 \\ &= \mathbf{7,122.3 \text{ per } 100,000}\end{aligned}$$

Estimated non-MSM Prevalence Rate: An estimate of the proportion of non-MSM that are currently living with HIV/AIDS used as a basis of comparison to the MSM prevalence rate. The numerator is the number of non-MSM who are living with HIV/AIDS as of a specific date and the denominator is the estimated size of the non-MSM population. The size of the non-MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18-64 years, reporting sex with only women, on the 2011 and 2012 Massachusetts BRFSS (95.1%) by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 1,963,629. The prevalence rate in non-MSM is calculated by the formula:

$$\begin{aligned}\text{HIV/AIDS prevalence rate for non-MSM as of 1/1/14} &= (\text{number of non-MSM living with HIV/AIDS on 1/1/14} \div \\ &\quad \text{estimated population size of non-MSM}) \times 100,000 \\ &= ((5,330 / (.951 \times 2,064,804)) \times 100,000 \\ &= (5,330 / 1,963,629) \times 100,000 \\ &= 0.00271436257810797 \times 100,000 \\ &= \mathbf{271.4 \text{ per } 100,000}\end{aligned}$$

Estimated Average Annual MSM HIV Diagnosis Rate: An estimate of the average proportion of MSM that are diagnosed with HIV infection over a three-year period. The numerator is the average number of MSM who were diagnosed with HIV infection over the three-year period and the denominator is the estimated size of the MSM population. The size of the MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18 to 64 years, reporting same-sex partner (or opposite and same-sex partner) on the 2011 and 2012 Massachusetts BRFSS (4.9%), by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 101,175. The estimated HIV diagnosis rate in MSM is calculated by the formula:

Average annual HIV
diagnosis rate among MSM,
2010–2012

$$\begin{aligned}
 &(((\text{number of MSM diagnosed with HIV infection in 2010} + \\
 &\text{number of MSM diagnosed with HIV infection in 2011} + \\
 &\text{number of MSM diagnosed with HIV infection in 2012}) \div 3) \\
 &\div \text{estimated population size of MSM}) \times 100,000 \\
 &= ((930 \div 3) / (.049 \times 2,064,804)) \times 100,000 \\
 &= (310 / 101,175) \times 100,000 \\
 &= 0.003064 \times 100,000 \\
 &= \mathbf{306.4 \text{ per } 100,000}
 \end{aligned}$$

Estimated Average Annual non-MSM HIV Diagnosis Rate: An estimate of the average proportion of non-MSM that are diagnosed with HIV infection over a three-year period used as a basis of comparison to the MSM diagnosis rate. The numerator is the average number of non-MSM who were diagnosed with HIV infection over the three-year period and the denominator is the estimated size of the non-MSM population. The size of the non-MSM population in Massachusetts was estimated by multiplying the average proportion of men, ages 18 to 64 years, reporting sex with only women on the 2011 and 2012 Massachusetts BRFSS (95.1%), by the number of 18 to 64 year old men in Massachusetts as reported in the 2010 Census (2,064,804), to get 1,963,629. The estimated HIV diagnosis rate in non-MSM is calculated by the formula:

Average annual HIV
diagnosis rate among non-
MSM, 2010–2012

$$\begin{aligned}
 &(((\text{number of non-MSM diagnosed with HIV infection in} \\
 &\text{2010} + \text{number of non-MSM diagnosed with HIV infection} \\
 &\text{in 2011} + \text{number of non-MSM diagnosed with HIV} \\
 &\text{infection in 2012}) \div 3) \div \text{estimated population size of non-} \\
 &\text{MSM}) \times 100,000 \\
 &= ((531 \div 3) / (.951 \times 2,064,804)) \times 100,000 \\
 &= (177 / 1,963,629) \times 100,000 \\
 &= 0.00009014 \times 100,000 \\
 &= \mathbf{9.0 \text{ per } 100,000}
 \end{aligned}$$

Table 1. People diagnosed with HIV infection by gender and reported risk: Massachusetts¹, 2010–2012²

Reported risk:	Male		Female		State Total	
	N	%	N	%	N	%
Male-to-male sex (MSM)	881	59%	N/A	N/A	881	43%
Injection drug use (IDU)	106	7%	66	12%	172	8%
MSM/IDU	63	4%	N/A	N/A	63	3%
Heterosexual sex	78	5%	150	27%	228	11%
Other	7	<1%	6	1%	13	1%
Total undetermined/other	368	24%	340	60%	708	34%
- Pres. HTSX ³	N/A	N/A	255	45%	255	12%
- Undetermined ⁴	368	24%	85	15%	453	22%
Total	1,503	100%	562	100%	2,065	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes female sex with male of unknown HIV status or risk. This category is limited to women.

⁴ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

Pres. HTSX = Presumed Heterosexual Sex; N/A = Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/14

Note: The category of “presumed heterosexual” is used in Massachusetts to re-assign women who are reported with an exposure of heterosexual sex, but only with a partner of unknown HIV status or behavioral risk. Massachusetts uses the category of presumed heterosexual to distinguish these female cases from other undetermined cases about which we know less. Prior to January 1, 2011, the presumed heterosexual category was also used to report HIV data in men. The rationale for the application of the presumed heterosexual reported risk category to women only has been addressed in the MDPH OHA report “Intersecting Risks: HIV Infection among Heterosexual Women and Men in Massachusetts.” (2010)

http://www.mass.gov/Eeohhs2/docs/dph/aids/intersecting_risks.pdf. Nationally, the Centers for Disease Control and Prevention categorize “presumed heterosexual” cases as “no identified risk” (NIR). As such, comparisons of the presumed heterosexual category cannot be made to national data. Caution should be used in interpreting data for presumed heterosexual, as it is still not clear what the exposure risk was for women in this category. Although a person may not report other risk behaviors, such as injection drug use to a health care provider, it does not exclude the possibility that an individual has experienced these other risks. There are many barriers to disclosing HIV risk behaviors in the health care setting such as a limited patient-provider relationship or stigma.

Table 2. People living with HIV/AIDS on December 31, 2013 by gender and reported risk: Massachusetts¹

	Male		Female		Total	
Reported risk:	N	%	N	%	N	%
Male-to-male sex (MSM)	7,137	52%	N/A	N/A	7,137	37%
Injection drug use (IDU)	2,431	18%	1,252	23%	3,683	19%
MSM/IDU	661	5%	N/A	N/A	661	3%
Heterosexual sex	804	6%	1,916	35%	2,720	14%
Other	226	2%	181	3%	407	2%
Total undetermined/other	2,421	18%	2,136	39%	4,557	24%
• Pres. HTSX ²	N/A	N/A	1,714	31%	1,714	9%
• Undetermined ³	2,421	18%	422	8%	2,843	15%
Total	13,680	100%	5,485	100%	19,165	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Includes female sex with male of unknown HIV status or risk. This category is limited to women.

³ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

N/A=Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/14

Table 3. Percentage distribution of people diagnosed with HIV infection by Health Service Region (HSR)¹ and reported risk: Massachusetts², 2010–2012³

	MSM	IDU	MSM/ IDU	HTSX	Other	Pres. HTSX ⁴	Undet. ⁵	Total
HSR	%	%	%	%	%	%	%	N
Boston	50%	6%	3%	10%	1%	11%	20%	625
Central	33%	11%	3%	15%	0%	19%	19%	180
Metro West	47%	3%	2%	10%	1%	13%	24%	322
Northeast	36%	8%	3%	14%	0%	11%	28%	367
Southeast	44%	8%	4%	9%	0%	15%	21%	281
Western	40%	12%	2%	12%	1%	12%	21%	233
Prison ⁶	18%	45%	7%	11%	0%	2%	16%	55
Total	43%	8%	3%	11%	1%	12%	22%	2,065

¹ Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf for configuration of health service regions.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

⁴ Includes female sex with male of unknown HIV status or risk. This category is limited to women.

⁵ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

⁶ HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex; Pres. HTSX = Presumed Heterosexual Sex; Undet. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/14

Table 4. Percentage distribution of people living with HIV/AIDS on December 31, 2013 by Health Service Region (HSR)¹ and reported risk: Massachusetts²

HSR	MSM	IDU	MSM/ IDU	HTSX	Other	Pres. HTSX ³	Undet. ⁴	Total
	%	%	%	%	%	%	%	N
Boston	48%	13%	3%	12%	2%	8%	14%	6,079
Central	26%	27%	3%	18%	3%	11%	12%	1,632
Metrowest	41%	11%	3%	13%	2%	11%	18%	2,799
Northeast	32%	16%	3%	16%	2%	11%	19%	3,039
Southeast	40%	20%	3%	15%	2%	7%	13%	2,616
Western	27%	27%	3%	18%	3%	9%	13%	2,069
Prison ⁵	7%	66%	8%	6%	<1%	1%	12%	924
Total⁶	37%	19%	3%	14%	2%	9%	15%	19,165

¹ Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf for configuration of health service regions.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Includes female sex with male of unknown HIV status or risk. This category is limited to women.

⁴ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

⁵ HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility. These data do not reflect current incarceration status.

⁶ Mass. total includes five persons living with HIV/AIDS with unknown residence at time of report.

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex; Pres. HTSX = Presumed Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/14

Table 5. Ten cities/towns¹ in Massachusetts with the highest proportion of Male-to-Male Sex (MSM) as primary reported risk among HIV infection diagnoses (HIV Dx): 2010–2012²

Rank	City/Town	Number of HIV Dx among MSM	Percent of Total HIV Dx
1	Provincetown	23	85%
2	Cambridge	27	57%
3	Quincy	15	56%
4	Fall River	12	50%
4	Boston	285	50%
5	Malden	11	44%
6	Everett	10	42%
7	Medford	9	41%
7	Somerville	13	41%
8	New Bedford	14	34%

¹ Among cities/towns with over 20 reported HIV Infection diagnoses in the years 2010–2012. Note: reflects the city/town of a person's residence at the time of report (not necessarily current residence). People diagnosed while at a correctional facility are not included.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/14

Table 6. Men diagnosed with HIV infection by reported risk and year of diagnosis: Massachusetts¹, 2003–2012²

	MSM		IDU		MSM/ IDU		HTSX		Undeter- mined ³		Total ⁴
	N	%	N	%	N	%	N	%	N	%	N
2003	318	49%	94	14%	32	5%	45	7%	150	23%	649
2004	292	45%	100	16%	26	4%	48	7%	174	27%	645
2005	351	54%	89	14%	22	3%	36	5%	158	24%	656
2006	339	58%	49	8%	18	3%	42	7%	134	23%	585
2007	292	55%	58	11%	22	4%	27	5%	131	25%	532
2008	288	54%	44	8%	29	5%	29	5%	138	26%	534
2009	310	59%	32	6%	18	3%	27	5%	140	26%	529
2010	292	59%	45	9%	22	4%	28	6%	108	22%	498
2011	272	56%	40	8%	19	4%	23	5%	133	27%	488
2012	317	61%	21	4%	22	4%	27	5%	127	25%	517

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available 10 year period after the implementation of HIV infection reporting in 1999.

³ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

⁴ Totals include pediatric and blood/blood products reported risks.

MSM = Male-to-Male Sex; IDU = Injection Drug Use; HTSX = Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/14

Table 7. Men diagnosed with HIV infection by reported risk and race/ethnicity: Massachusetts¹, 2010–2012²

Race/ Ethnicity:	MSM		IDU		MSM/ IDU		HTSX		Other		Undeter- mined ³	
	N	%	N	%	N	%	N	%	N	%	N	%
White (NH)	506	57%	29	27%	48	76%	10	13%	0	0%	81	22%
Black (NH)	135	15%	22	21%	6	10%	32	41%	4	57%	163	44%
Hispanic/Latino	190	22%	52	49%	8	13%	34	44%	3	43%	111	30%
API	40	5%	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	0	0%	-- ⁴	-- ⁴
Other/Und.	10	1%	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	0	0%	-- ⁴	-- ⁴
Total	881	100%	106	100%	63	100%	78	100%	7	100%	368	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

⁴ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

(NH) = Non-Hispanic, API = Asian/Pacific Islander, Und. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/14

Table 8. Men living with HIV/AIDS on December 31, 2013 by reported risk and race/ethnicity: Massachusetts¹

Race/ Ethnicity:	MSM		IDU		MSM/ IDU		HTSX		Other		Undeter- mined ²	
	N	%	N	%	N	%	N	%	N	%	N	%
White (NH)	4,934	69%	747	31%	413	62%	149	19%	70	31%	614	25%
Black (NH)	937	13%	591	24%	111	17%	367	46%	91	40%	1,137	47%
Hispanic/Latino	1,067	15%	1,067	44%	128	19%	271	34%	64	28%	582	24%
API	146	2%	15	1%	-- ³	-- ³	-- ³	-- ³	-- ³	-- ³	76	3%
Other/Und.	53	1%	11	<1%	-- ³	-- ³	-- ³	-- ³	-- ³	-- ³	12	<1%
Total	7,137	100%	2,431	100%	661	100%	804	100%	226	100%	2,421	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

³ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

(NH) = Non-Hispanic, API = Asian/Pacific Islander, Und. = Undetermined

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/14

Table 9. Men diagnosed with HIV infection by race/ethnicity, age at HIV diagnosis and reported risk: Massachusetts, 2010–2012²

	White NH				Black NH				Hispanic/Latino				Total ¹			
Age in yrs.	13–24		25+		13–24		25+		13–24		25+		13–24		25+	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
MSM	57	80%	449	74%	41	71%	94	31%	44	75%	146	43%	153	77%	728	56%
IDU	-- ⁴	-- ⁴	27	4%	0	0%	22	7%	0	0%	52	15%	-- ⁴	-- ⁴	104	8%
MSM/IDU	10	14%	38	6%	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	7	2%	15	8%	48	4%
HTSX	0	0%	10	2%	0	0%	32	11%	-- ⁴	-- ⁴	32	9%	-- ⁴	-- ⁴	76	6%
Other	0	0%	0	0%	-- ⁴	-- ⁴	0	0%	-- ⁴	-- ⁴	0	0%	-- ⁴	-- ⁴	0	0%
Undetermined ³	-- ⁴	-- ⁴	79	13%	12	21%	151	50%	11	19%	100	30%	25	13%	343	26%
Total	71	100%	603	100%	58	100%	301	100%	59	100%	337	100%	199	100%	1,299	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

⁴ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

MSM = Male-to-Male Sex; IDU = Injection Drug Use; MSM/IDU = Male-to-Male Sex and Injection Drug Use; HTSX = Heterosexual Sex;

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/14

Table 10. Men diagnosed with HIV infection by mode of exposure and place of birth: Massachusetts¹, 2010–2012²

	MSM		IDU		MSM/ IDU		HTSX		Other		Undeter- mined ³	
United States	671	76%	67	63%	53	84%	28	36%	6	86%	171	46%
PR/US Depen. ⁴	39	4%	34	32%	5	8%	13	17%	-- ⁵	-- ⁵	22	6%
Non-US	171	19%	5	5%	5	8%	37	47%	-- ⁵	-- ⁵	175	48%
Total	881	100%	106	100%	63	100%	78	100%	7	100%	368	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

⁴ Ninety-eight percent of people diagnosed with HIV infection from 2010–2012 who were born in a US dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, 1% were born in Guam and 1% were born in an unknown dependency.

⁵ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/14

Table 11. Men living with HIV/AIDS on December 31, 2013 by mode of exposure and place of birth: Massachusetts¹

	MSM		IDU		MSM/ IDU		HTSX		Other		Undeter- mined ²	
United States	5,886	82%	1,596	66%	548	83%	350	44%	184	81%	1,060	44%
PR/US Depen. ³	217	3%	724	30%	70	11%	115	14%	14	6%	159	7%
Non-US	1,034	14%	111	5%	43	7%	339	42%	28	12%	1,202	50%
Total	7,137	100%	2,431	100%	661	100%	804	100%	226	100%	2,421	100%

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

³ Ninety-eight percent of people living with HIV/AIDS who were born in a US Dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, <1% were born in Guam and 2% were born in an unknown dependency.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/14

Table 12. MSM¹ diagnosed with HIV infection by race/ethnicity and place of birth: Massachusetts², 2010–2012

	White Non-Hispanic		Black Non-Hispanic		Hispanic/Latino	
Place of Birth	N	%	N	%	N	%
United States	461	91%	109	81%	74	39%
PR/US Depen. ³	0	0%	0	0%	39	21%
Non-US	45	9%	26	19%	77	41%
Total	506	100%	135	100%	190	100%

¹ Includes primary reported mode of exposure as male-to-male sex (MSM)

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ PR/US Depen. = Puerto Rico/US Dependency; 98% of people diagnosed with HIV infection from 2010–2012 who were born in a US dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, 1% were born in Guam and 1% were born in an unknown dependency.

⁴ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/14

Table 13. MSM¹ living with HIV/AIDS on December 31, 2013 by race/ethnicity and place of birth: Massachusetts²

	White Non-Hispanic		Black Non-Hispanic		Hispanic/Latino	
MSM	N	%	N	%	N	%
US	4,626	94%	777	83%	384	36%
PR/US Depen. ³	4	0%	5	1%	208	19%
Non-US	304	6%	155	17%	475	45%
Total	4,934	100%	937	100%	1,067	100%

¹ Includes primary reported mode of exposure as male-to-male sex (MSM)

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ PR/US Depen. = Puerto Rico/US Dependency; 98% of people living with HIV/AIDS who were born in a US Dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, <1% were born in Guam, and 2% were born in an unknown dependency.

⁴ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/14

Technical Notes:

Tables 14–17 include trends reported by Massachusetts residents through anonymous telephone interviews from 2001 to 2010 and single year estimates for 2011. Data for 2011 are not included in trend data because new weighting methodology (raking weight) implemented by CDC in 2011 makes this year not comparable with previous years. This ongoing random-digit-dial telephone survey, the Behavioral Risk Factor Surveillance System (BRFSS), covers a broad range of topic areas (including risk related to sexual activity) and is part of a CDC-funded national survey program.

Table 14. Percent of men ages 18–64¹ years by sex of sexual partner(s) during the past 12 months: Massachusetts, 2001–2010²

Men ages 18–64			
Year	Same-Sex/ Both Sexes	Opposite Sex Only	N
2001	4.3%	95.7%	1,528
2002	8.5%	91.5%	952
2003	7.2%	92.8%	894
2004	9.4%	90.6%	977
2005	4.9%	95.1%	834
2006	5.4%	94.6%	1,217
2007	6.5%	93.6%	841
2008	5.2%	94.8%	1,305
2009	5.9%	94.1%	992
2010	6.1%	93.9%	1,010

¹ Sexually active in past year

² 2011 data are not presented because new weighting methodology (raking weight) implemented by CDC in 2011 makes this year not comparable with previous years.

Data Source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS)

Table 15. Condom use at last sexual encounter¹ among men ages 18–64² years reporting same-sex partner (or opposite- and same-sex partners)³: Massachusetts, 2001–2010⁴

Year	Used Condom (%)	Did not Use Condom (%)	Total (N) ⁵
2001	37.5%	62.5%	64
2002	46.0%	54.0%	81
2003	39.0%	61.0%	63
2004	41.8%	58.2%	91
2005	55.6%	44.4%	39
2006	46.9%	53.1%	56
2007	31.7%	68.3%	54
2008	34.4%	65.6%	68
2009	31.4%	68.6%	59
2010	44.3%	55.7%	62

¹ Includes oral, vaginal, or anal sex (with either a male or female partner) but not masturbation

² Sexually active in past year

³ During the past 12 months

⁴ 2011 data are not presented because new weighting methodology (raking weight) implemented by CDC in 2011 makes this year not comparable with previous years.

⁵ Annual number of male respondents reporting same sex partner

Note: Caution should be used in interpreting these results as the effective sample size is small and confidence intervals are wide. There are no significant differences between any years in the percent who used a condom at last intercourse

Data Source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), 2001–2010

Table 16. Number of sexual partners in the past year and condom use at last sexual encounter among men ages 18–64¹ reporting same-sex partner (or opposite- and same-sex partners)² compared to male respondents reporting only opposite-sex partner²: Massachusetts, 2012–2013

	Men Reporting Same-Sex Partner or Opposite- and Same-Sex Partners	Men Reporting Only Opposite-Sex Partner
Number of Sexual Partners:	% [Confidence Interval]	% [Confidence Interval]
1 partner	60.6 (39.4 – 81.7)	85.8 (82.3 – 89.3)
2 or more partners	39.4 (18.3 – 60.6)	14.2 (10.7 – 17.7)
Total N	86	1,597
Condom Use: ³	%	%
Yes	39.6 (20.1 – 59.1)	27.3 (23.3 – 31.3)
No	60.4 (40.9 – 79.9)	72.7 (68.7 – 76.7)
Total N	89	1,603
¹ Sexually active in past year ² During the past 12 months ³ At last sexual intercourse Note: Caution should be used in interpreting these results as the effective sample size is small and confidence intervals are wide. There are no significant differences between any years in the percent who used a condom at last intercourse. Data Source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), 2011-2012		

Technical Notes:

Tables 17–19 include data reported by students in randomly selected Massachusetts public high schools every odd year from 1993 to 2011. This anonymous survey, the Youth Risk Behavior Survey (YRBS), is administered by the Massachusetts Department of Elementary and Secondary Education in collaboration with the Centers for Disease Control and Prevention and focuses on risk behaviors that may affect the health and/or safety of high school students.

Table 17. Percentage of sexually active male respondents by sex of sexual partner(s) and year: Massachusetts Youth Risk Behavior Survey, 1997–2013¹

Year	Same-Sex/ Both Sexes		Opposite-Sex	
	Total N ²	%	Total N ²	%
1997	69	6.6%	941	93.4%
1999	89	7.0%	1,169	93.0%
2001	63	5.1%	1,080	94.9%
2003	59	6.1%	931	93.9%
2005	79	8.0%	881	92.0%
2007	70	8.0%	843	92.0%
2009	70	7.5%	802	92.5%
2011	66	7.5%	743	92.5%
2013	48	6.8%	678	93.2%

¹ A random sample of high schools is selected for participation each year, data presented do not represent cohorts followed over time

² Total N = total number of respondents by sex of partner (unweighted). The number of respondents for each question varies from year to year

Data Source: Massachusetts Department of Elementary and Secondary Education, Youth Risk Behavior Survey (YRBS), 1997–2013

Table 18. Sexual behavior as reported among male respondents, Youth Risk Behavior Survey (YRBS): Massachusetts, 2011–2013

	Sex of Partner			
	Opposite-Sex		Same-Sex/ Both Sexes	
By Behavior:	Total N ²	% ¹	Total N ²	% ¹
Ever had sexual intercourse ³	1,288	75.0	92	75.4
Sexual intercourse before age 13	1,278	8.8	92	14.7
4 or more lifetime sexual intercourse partners	1,278	20.2	91	30.4
4 or more sexual intercourse partners in last 3 months	968	4.8	69	17.2
Alcohol/drugs used at last intercourse ⁴	652	28.2	43 ⁵	42.4
Condom used at last intercourse ⁴	640	66.5	45 ⁵	42.1
Ever been diagnosed with any STD	1,404	1.9	113	6.9
Ever injected illegal drugs	1,416	2.1	109	13.5

¹ % = percent of total responding "yes" to specified question
² N = total number of respondents (unweighted) by sex of partner for each question. The number of respondents for each question varies because some survey participants do not answer all questions
³ Among men who reported any sexual contact with opposite sex partner, same sex partner, or both
⁴ Among men reporting sexual intercourse in the past three months
⁵ This estimate may be unreliable due to a Relative Standard Error of greater than 30% and N < 50, interpret with caution.
 Data Source: Massachusetts Department of Elementary and Secondary Education, Youth Risk Behavior Survey (YRBS), 2011-2013

Table 19. Percentage of Massachusetts Youth Risk Behavior Survey (YRBS) male respondents reporting condom use at last sexual intercourse¹ by year and sex of partner: Massachusetts, 1993–2013

Year	Opposite-Sex		Same-Sex/ Both Sexes		Total	
	Total N ²	%	Total N ²	%	Total N ²	%
1993	384	58.5%	24 ³	42.3%	409	57.4%
1995	519	60.3%	28 ³	40.0%	623	59.9%
1997	480	65.4%	34 ³	45.5%	517	64.2%
1999	542	64.4%	44 ³	39.1%	589	62.6%
2001	506	63.6%	27 ³	18.5%	553	61.6%
2003	395	62.0%	27 ³	29.6%	424	60.3%
2005	403	72.7%	36 ³	56.6%	442	71.6%
2007	392	65.0%	27 ³	38.5%	419	63.4%
2009	367	68.0%	41 ³	47.0%	409	65.7%
2011	346	65.8%	24 ³	43.9%	373	64.5%
2013	294	67.3%	21 ³	40.1%	323	65.2%

¹ Among youth reporting sexual intercourse in the past three months

² Total N = total number of respondents by sex of partner (unweighted). The number of respondents for each question varies from year to year.

³ This estimate may be unreliable due to a Relative Standard Error of greater than 30% and N <50, interpret with caution.

Data Source: Massachusetts Department of Elementary and Secondary Education, Youth Risk Behavior Survey (YRBS), 1993–2013

Table 23. Reported infectious syphilis cases that were among men who have sex with men (MSM): Massachusetts, 2004–2013

Year	Number of Cases among MSM	Total Number of Cases	Proportion of Cases among MSM
2004	152	519	29%
2005	172	407	42%
2006	176	394	45%
2007	200	392	51%
2008	305	366	83%
2009	306	380	81%
2010	384	465	83%
2011	388	500	78%
2012	438	561	78%
2013	536	701	76%

Data Source: MDPH Division of STD Prevention

Table 24. Reported infectious syphilis cases among men who have sex with men by HIV status and year of diagnosis: Massachusetts, 2004–2013

Year	HIV-Positive		HIV-Negative/ Unknown Serostatus		Total
	N	%	N	%	N
2004	64	42%	88	58%	152
2005	87	51%	85	49%	172
2006	92	52%	84	48%	176
2007	100	50%	100	50%	200
2008	132	43%	173	57%	305
2009	138	45%	168	55%	306
2010	158	41%	226	59%	384
2011	154	40%	234	60%	388
2012	188	43%	250	57%	438
2013	232	43%	304	57%	536

Data Source: MDPH Division of STD Prevention

Table 25. Deaths among persons reported with HIV/AIDS by reported risk and year of death: Massachusetts¹, 2003–2012

	MSM		IDU		MSM/ IDU		HTSX		Pres. HTSX ²		Undeter- mined ³		Total ⁴
	N	%	N	%	N	%	N	%	N	%	N	%	N
2003	68	17%	196	50%	17	4%	47	12%	9	2%	46	12%	391
2004	68	19%	177	50%	17	5%	32	9%	12	3%	40	11%	353
2005	56	17%	171	52%	15	5%	39	12%	18	5%	31	9%	332
2006	63	19%	162	50%	19	6%	32	10%	16	5%	30	9%	324
2007	64	22%	125	44%	26	9%	28	10%	13	5%	25	9%	286
2008	57	20%	127	45%	15	5%	26	9%	12	4%	41	15%	282
2009	45	16%	144	50%	10	3%	36	13%	13	5%	39	14%	288
2010	58	22%	119	46%	14	5%	18	7%	10	4%	37	14%	260
2011	42	20%	89	42%	16	8%	22	10%	7	3%	33	16%	212
2012	46	22%	102	49%	8	4%	20	10%	9	4%	19	9%	208

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Includes female sex with male of unknown HIV status or risk. This category is limited to women.

³ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

⁴ Totals include pediatric and blood/blood products reported risks

MSM = Male-to-Male Sex; IDU = Injection Drug Use; HTSX = Heterosexual Sex; Pres. HTSX = Presumed Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/14